

**IN THE CLAIMS:**

1           1.     (Currently Amended) An alternating current type surface-discharge plasma  
2 display panel comprising a facing pair of substrates and a plurality of ribs interposed between the  
3 substrates so as to form a plurality of spaces,

4                     the plurality of spaces being provided with a phosphor layer and filled with  
5 discharge gas, so as to form a plurality of discharge spaces;

6                     inside each of the discharge spaces, plural pairs of display electrodes covered by a  
7 dielectric layer being provided, the dielectric layer is made of two different sets of material,

8                     the plasma display panel performing displaying by the following steps: 1) writing  
9 by an accumulation of electric charge in the dielectric layer, 2) applying a predetermined  
10 sustaining voltage between the pairs of display electrodes, 3) glow-discharging in selected  
11 discharge spaces in which the electric charge has been accumulated in the dielectric layer, and 4)  
12 converting ultraviolet light resulting from the glow-discharge into visible light by means of the  
13 phosphor layer,

14                     wherein the dielectric layer is made by laminating ~~at least~~ the two different  
15 dielectric materials,

16                     and wherein ~~a~~ the panel structure is set such that an equivalent electric field  
17 strength of 37V/cm • Pa or more is generated in the selected discharge spaces, when the  
18 predetermined sustaining voltage is applied.

1           2.     (Original) The plasma display panel of Claim 1,

2                     wherein the discharge gas contains xenon, and the ultraviolet light contains more  
3 amount of xenon molecular line than an amount of xenon resonance) line on the spectrum.

1           3.     (Currently Amended) An alternating current type surface-discharge plasma  
2 display panel comprising a facing pair of substrates and a plurality of ribs interposed between the  
3 substrates so as to form a plurality of spaces,

4                   the plurality of spaces being provided with a phosphor layer and filled with  
5 discharge gas, so as to form a plurality of discharge spaces,

6                   inside each of the discharge spaces, plural pairs of display electrodes are covered  
7 by a dielectric layer, ~~being provided~~ the dielectric layer is made of two different sets of material,

8                   the plasma display panel performing displaying by the following steps: 1) writing  
9 by an accumulation of electric charge in the dielectric layer, 2) applying a predetermined  
10 sustaining voltage between the pairs of display electrodes, 3) glow-discharging in selected  
11 discharge spaces in which the electric charge has been accumulated in the dielectric layer, and 4)  
12 converting ultraviolet light resulting from the glow-discharge into visible light by means of the  
13 phosphor layer,

14                   wherein an amount of xenon contained in the discharge gas and filling pressure of  
15 the discharge gas, a gap between the display electrodes, and a thickness and a permittivity of the  
16 dielectric layer are set so that an equivalent electric field strength of  $37\text{V/cm} \cdot \text{Pa}$  or more is  
17 generated in the selected discharge spaces, when the predetermined sustaining voltage is applied.

1           4.     (Original) The plasma display panel of Claim 3,

2                   wherein xenon contained in the discharge gas is in a range of 5% to 90 %  
3 inclusive.

1           5.       (Original) The plasma display panel of Claim 4,  
2                   wherein the filling pressure of the discharge gas is in a range of 66.5KPa to  
3       200KPa inclusive.

1           6.       (Currently Amended) The plasma display panel of Claim 3,  
2                   wherein the thickness of the dielectric layer is in a range of 3  $\mu$ m to 5  $\mu$ m  
3       inclusive, at a point where ~~a~~ the pair of the display electrodes are opposing each other.

1           7.       (Currently Amended) The plasma display panel of Claim 6,  
2                   wherein the dielectric constant of the dielectric layer is 6 or more and less than 9.

1           8.       (Cancelled)

1           9.       (Previously Presented) The plasma display panel of Claim 3,  
2                   wherein the distance between the pairs of display electrodes is in a range of  
3       20  $\mu$ m to 90  $\mu$ m inclusive, where the display electrodes are facing the discharge spaces.

1           10.      (Currently Amended) An alternating current type surface-discharge plasma  
2       display panel comprising a first plate and a second plate disposed parallel to each other, with a  
3       plurality of ribs interposed between the two plates so as to form a plurality of spaces,  
4               the first plate having, on an inner surface, plural pairs of display electrodes  
5       covered by a dielectric layer, the dielectric layer is made of two different sets of material,  
6               the second plate having, on an inner surface, a plurality of address electrodes,  
7               the first plate and the second plate being disposed in such a manner that the  
8       display electrodes cross over the address electrodes,

each of the plurality of ribs being interposed between adjacent address electrodes,  
and

each of the plurality of spaces being provided with a phosphor layer and filled  
with discharge gas, so as to form discharge spaces,

the plasma display panel performing displaying the following steps: 1)  
accumulating electric charge in the dielectric layer by performing writing-discharge between the  
display electrodes and the address electrodes, 2) applying a predetermined sustaining voltage  
between the pairs of display electrodes, 3) glow-discharging in selected discharge spaces in  
which the electric charge has been accumulated in the dielectric layer, and 4) converting  
ultraviolet light resulting from the glow-discharge into visible light by means of the phosphor  
layer,

wherein a- the panel structure is set such that an equivalent electric field strength  
of 37V/cm • Pa or more is generated in the selected discharge spaces, when the predetermined  
sustaining voltage is applied.

11. (Currently Amended) An alternating current type surface-discharge plasma  
display panel comprising a first plate and a second plate disposed parallel to each other, with a  
plurality of ribs interposed between the two plates so as to form a plurality of spaces,

the first plate having, on an inner surface, plural pairs of display electrodes  
covered by a dielectric layer, the dielectric layer is made of two different sets of material,

the second plate having, on an inner surface, a plurality of address electrodes,

the first plate and the second plate being disposed in such a manner that the  
display electrodes cross over the address electrodes,

9                   each of the plurality of ribs being interposed between adjacent address electrodes,  
10   and  
11                   each of the plurality of spaces being provided with a phosphor layer and filled  
12   with discharge gas, so as to form discharge spaces,  
13                   the plasma display panel performing displaying by the following steps: 1)  
14   accumulating electric charge in the dielectric layer by performing writing-discharge between the  
15   display electrodes and the address electrodes, 2) applying a predetermined sustaining voltage  
16   between the pairs of display electrodes, 3) glow-discharging in selected discharge spaces in  
17   which the electric charge has been accumulated in the dielectric layer, and 4) converting  
18   ultraviolet light resulting from the glow-discharge into visible light by means of the phosphor  
19   layer,  
20                   wherein an amount of xenon contained in the discharge gas and filling pressure of  
21   the discharge gas, a gap between the display electrodes, and the thickness and a permittivity of  
22   the dielectric layer are set so that an equivalent electric field strength of  $37\text{V/cm} \cdot \text{Pa}$  or more is  
23   generated in the selected discharge spaces, when the predetermined sustaining voltage is applied.

1       12-16.   (Cancelled)

1       17.   (Previously Presented) The plasma display panel of Claim 11,  
2                   wherein the distance between the pair of display electrodes is in a range of  $20\text{ }\mu\text{m}$   
3   to  $90\text{ }\mu\text{m}$  inclusive, where the display electrodes are facing the discharge spaces.

1       18-25.   (Cancelled)

1           26.   (Previously Presented) A display unit comprising the alternating current type  
2 surface-discharge plasma display panel of Claim 1, and a driving circuit for applying voltage to  
3 every electrode included in the plasma display panel.

1           27.   (Previously Presented) The plasma display panel of Claim 4,  
2                   wherein the distance between the pairs of display electrodes is in a range of  
3 20  $\mu\text{m}$  to 90  $\mu\text{m}$  inclusive, where the display electrodes are facing the discharge spaces.

1           28.   (Previously Presented) The plasma display panel of Claim 5,  
2                   wherein the distance between the pairs of display electrodes is in a range of  
3 20  $\mu\text{m}$  to 90  $\mu\text{m}$  inclusive, where the display electrodes are facing the discharge spaces.

1           29.   (Previously Presented) The plasma display panel of Claim 6,  
2                   wherein the distance between the pairs of display electrodes is in a range of  
3 20  $\mu\text{m}$  to 90  $\mu\text{m}$  inclusive, where the display electrodes are facing the discharge spaces.

1           30.   (Previously Presented) The plasma display panel of Claim 7,  
2                   wherein the distance between the pairs of display electrodes is in a range of  
3 20  $\mu\text{m}$  to 90  $\mu\text{m}$  inclusive, where the display electrodes are facing the discharge spaces.

1           31.   (Previously Presented) The plasma display panel of Claim 12,  
2                   wherein the distance between the pair of display electrodes is in a range of 20  $\mu\text{m}$   
3 to 90  $\mu\text{m}$  inclusive, where the display electrodes are facing the discharge spaces.

1           32.   (Previously Presented) The plasma display panel of Claim 13,  
2                   wherein the distance between the pair of display electrodes is in a range of 20  $\mu\text{m}$   
3   to 90  $\mu\text{m}$  inclusive, where the display electrodes are facing the discharge spaces.

1           33.   (Previously Presented) The plasma display panel of Claim 14,  
2                   wherein the distance between the pair of display electrodes is in a range of 20  $\mu\text{m}$   
3   to 90  $\mu\text{m}$  inclusive, where the display electrodes are facing the discharge spaces.

1       34-39.   (Cancelled)

1           40.   (Previously Presented) The plasma display panel of Claim 17,  
2                   wherein forms of a pair of the display electrodes differ from each other.

1           41.   (Previously Presented) The plasma display panel of Claim 17,  
2                   wherein at least one of pair of the display electrodes has protrusions extending  
3   toward the other display electrode.

1           42.   (Cancelled)

1           43.   (Currently Amended) The plasma display panel of Claim 17,  
2                   wherein the display electrodes are metal electrodes and the ~~permittivity~~ dielectric  
3   constant of the dielectric layer is 6 or more than 9 or less.

1           44.   (Cancelled)

1           45.   (Previously Presented) The plasma display panel of Claim 17,  
2                   wherein the display electrodes are made by stacking bus lines on transparent  
3 electrodes, and the dielectric layer is thicker on the bus lines than on the transparent electrodes.

1           46.   (Cancelled)

1           47.   (Previously Presented) A display unit comprising the alternating current type  
2 surface-discharge plasma display panel of Claim 2, and a driving circuit for applying voltage to  
3 each electrode included in the plasma display panel.

1           48.   (Previously Presented) A display unit comprising the alternating current type  
2 surface-discharge plasma display panel of Claim 3, and a driving circuit for applying voltage to  
3 each electrode included in the plasma display panel.

1           49.   (Previously Presented) A display unit comprising the alternating current type  
2 surface-discharge plasma display panel of Claim 10, and a driving circuit for applying voltage to  
3 each electrode included in the plasma display panel.

1           50.   (Previously Presented) A display unit comprising the alternating current type  
2 surface-discharge plasma display panel of Claim 11, and a driving circuit for applying voltage to  
3 each electrode included in the plasma display panel.



1           51. (New) An alternating current type surface-discharge plasma display panel  
2 comprising a facing pair of substrates and a plurality of ribs interposed between the substrates so  
3 as to form a plurality of spaces,

4           the plurality of spaces being provided with a phosphor layer and filled with  
5 discharge gas including Xenon, so as to form a plurality of discharge spaces;

6           inside each of the discharge spaces, plural pairs of display electrodes are covered  
7 by a dielectric layer;

8           the plasma display panel providing a display by: 1) writing by an accumulation of  
9 electric charge in the dielectric layer, 2) applying a predetermined sustaining voltage between the  
10 pairs of display electrodes, 3) glow-discharging in selected discharge spaces in which the electric  
11 charge has been accumulated in the dielectric layer, and 4) converting ultraviolet light resulting  
12 from the glow-discharge into visible light by means of the phosphor layer,

13           wherein the dielectric layer is made by laminating at least two different dielectric  
14 materials,

15           and wherein a ratio of Xe excimer exceeds that of a Xe resonance line in the  
16 ultraviolet light when a predetermined sustaining voltage is applied.

1           52. (New) The alternating current type surface-discharge plasma display panel of  
2 Claim 51 wherein a first dielectric material covers the display electrodes and a second dielectric  
3 material covers only a portion of the display electrodes.

1           53.   (New) The alternating current type surface-discharge plasma display panel of  
2   Claim 51 wherein

3                   a first dielectric material is  $\text{ZnO-B}_2\text{O}_3\text{-SO}_2\text{-K}_2\text{O-CuO}$  and a second dielectric  
4   material is  $\text{ZnO-B}_2\text{O}_3\text{-SiO}_2\text{-K}_2\text{O}$ .

1           54.   (New) The alternating current type surface-discharge plasma display panel of  
2   Claim 51 wherein

3                   one dielectric material has a dielectric constant within a range of 6-7 and the other  
4   dielectric material has a dielectric constant within a range of 11-13.

1           55.   (New) The alternating current type surface-discharge plasma panel of Claim 51  
2   wherein one dielectric material is a  $\text{PbO}$  glass and the other dielectric material is a  $\text{ZnO}$  glass.

1           56.   (New) The alternating current type surface-discharge plasma panel of Claim 51  
2   wherein one dielectric material has a higher softening temperature than the other dielectric  
3   material.